PROJECT DESCRIPTION

I. GENERAL

This project involves the installation of a new Traffic Control Signal with street lighting and pre-emption at the intersection of US 11 (Virginia Ave.) and Massey Blvd. in Washington County. US 11 is assumed to run in a north-south direction.

II. INTERSECTION OPERATION

- 1. The intersection is to operate in a NEMA four-phase, fully-actuated mode, with the US 11 approaches running concurrently. An Exclusive/ Permissive left turn phase shall be provided for the northbound approach of US 11. A pedestrian phase with pushbutton actuation shall be provided to cross the north leg of the intersection. Opticom shall be installed for both north and south bound US 11. The pedestrian phase crossing Massey Blvd. shall be on recall. The Massey Blvd. approach shall operate alone.
- 2. A full-traffic-actuated, eight-phase controller with two (2) four-channel, rack mount loop detector amplifiers and Opticom Discriminator Card with associated harnesses housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.

III. SPECIAL NDTES

- 1. All field wiring shall be terminated to the appropriate controller cabinet connectors by the Contractor and labeled. All other controller cabinet wiring will be performed by the S.H.A. Signal Shop. Contact Mr. Ed Rodenhizer at (410) 787-7650 seventy-two hours in advance of intended
- 2. Upon completion of this project, the Contractor shall notify Mr. Robert Snyder at (410) 787-7631 to arrange for the phone line installation. The Contractor is to provide Mr. Robert Snyder with the nearest street address, zip code and phone number.

EQUIPMENT LISTS

EQUIPMENT TO BE FURNISHED BY THE DEVELOPER AND INSTALLED BY THE CONTRACTOR.

QUANTITY	SPEC. SECTION	DESCRIPTION					
1 Each	n 816	Eight-phase, full-traffic-actuated, solid state digital controller with two (2) four-channel rack mount loop detector amplifiers, Intersection Monitor II software and external modem and associated harnesses housed in a NEMA size "6" base-mounted cabinet.					
1 Each	818	27' steel pole with a 38' mast arm. (Note: 4 anchor bolts will be 1 $\frac{1}{2}$ " \times 60".)					
1 Each	818	23' (cut from 27') steel pole with twin 30' (cut from 50') -60 ' mast arms (Note: 4 anchor bolts will be (2" \times 90".)					
2 Each	1	Opticom detector eye # 721.					
1 Each	1	Discriminator Card #752					
500 L.F	۰	Canoga 4-conductor electrical cable (No. 14 A.W.G.) (shielded) for Opticom detector.					
2 Eact	n	10' breakaway pedestal pole with transformer base.					

EQUIPMENT	TO BE FURN	VISHED AND INSTALLED BY THE CONTRACTOR.					
	SPEC.						
QUANTITY	SECTION	DESCRIPTION					
L.S.	106	Mobilization					
L.S.	106	Maintenance of traffic.					
150 S.F.	104	Temporary traffic sign.					
15 U.D.	105	Flashing arrow panels.					
4 C.Y.	204	Test pit excavation.					
4000 L.F.	951	Furnish and install 5" yellow heat applied permanent preformed thermoplastic pavement marking, (for centerlines).					
3300 L.F.	951	Furnish and install 5" white heat applied permanent preformed thermoplastic pavement marking (for lane line).					
160 L.F.	951	Furnish and install 10" yellow heat applied permanent preformed thermoplastic pavement marking. (for cross hatching).					
190 L.F.	951	Furnish and install 24" white heat applied permanent, preformed thermoplastic pavement marking (for stoplines).					
270 L.F.	951	Furnish and install 12" white heat applied permanent, preformed thermoplastic pavement marking (for crosswalks).					
12 C.Y.	801	Furnish and install concrete for signal foundation.					
5 Each	804	Furnish and install ground rod, ${}^{3}\prime_{4}{}''$ diameter x 10' length.					
425 L.F.	815	Furnish and install sawcut.					
8 Each	811	Furnish and install handhole.					
1 Each	807	Furnish and install control and distribution equipment.					
70 L.F.	812	Furnish and install wood sign supports (4" \times 4").					
1 Each	806	Furnish and install 250 watt HPS luminaire with photo cell.					
1 Each	808	Furnish and install 10' lighting bracket arm.					
32 L.F.	805	Furnish and install 1" liquid tight flexible non-metallic electrical conduit (detector wire sleeve).					
8 L.F.	805	Furnish and install 1" galvanized steel electrical conduit for detector wire sleeve.					

EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR (CON'T.).

QUANTITY 2 Each	SPEC. SECTION 951	DESCRIPTION Furnish and install heat applied permanent preformed thermoplastic pavement marking (DNLY).				
1 Each	951	Furnish and install heat applied permanent preformed thermoplastic pavement marking for railroad crossing (All inclusive — see typical on sheet 2 of 3).				
3 Each	951	Furnish and install heat applied permanent preformed thermoplastic pavement marking arrow. (Left)				
25 L.F.	805	Furnish and install 2" polyvinyl chloride electrical conduit (Schedule 80) (trenched).				
430 L.F.	805	Furnish and install 3" polyvinyl chloride electrical conduit (Schedule 80) (trenched).				
75 L.F.	805	Furnish and install 4" polyvinyl chloride electrical conduit (Schedule 80) (bored).				
115 L.F.	805	Furnish and install 4" polyvinyl chloride electrical conduit (Schedule 80) (trenched).				
210 L.F.	804	Furnish and install stranded bare copper ground wire				
1670 L.F.	810	(No. 6 A.W.G.). Furnish and install loop wire (No. 14 A.W.G.) encased in				
650 L.F.	810	Furnish and install 2-conductor electrical cable				
75 L.F.	810	(No. 14 A.W.G.) (aluminum shielded). Furnish and install 5-conductor electrical cable				
		(No. 14 A.W.G.). Furnish and install 7-conductor electrical cable				
710 L.F.	810	(No. 14 A.W.G.).				
175 L.F.	810	Furnish and install 2-conductor electrical cable (No. 12 A.W.G.) type THHN tray cable.				
30 L.F.	810	Furnish and install 3-wire electrical cable (No. 4 AWG).				
140 L.F.	810	Furnish and install 2-conductor electrical cable (No. 14 A.W.G.).				
150 L.F.	810	Furnish and install 3-conductor electrical cable (No. 14 A.W.G.).				
4 Each	814	Furnish and install 12", one-way, three-section (R,Y,G) traffic signal head with adjustable bracket for mast arm mounting and tunnel visors.				
1 Each	814	Furnish and install 12", one—way, five—section (R,YA,Y,GA,G) (left arrows) traffic signal head with adjustable bracket for mast arm mounting and tunnel visors.				
1 Each	814	Furnish and install 12", one-way, five-section (R,YA,Y,GA,G) (right arrows) traffic signal head with adjustable bracket for mast arm mounting and tunnel visors.				
1 Each	814	Furnish and install combination 8″–12″, one-way, five- section (8″–R,Y,G) (12″–YA,GA) (left arrows) traffic signal head with adjustable bracket for mast arm mounting and tunnel visors.				
1 Each	814	12", one—way, two—section (DW,W) symbolic pedestrian signal head with adjustable bracket for pole mounting and cutaway visors.				
1 Each	814	12", one-way, two-section (DW.W) symbolic pedestrian signal head having proper post top adapter for pedestal mounting and cutaway visors.				
1 Each	814	12", two-way, two-section (DW,W) symbolic pedestrian signal head having proper post top adapter for pedestal mounting and cutaway visors.				
2 Sets	815.01/ 815.02	Furnish and install probes (Model 20002) (set of 3) with lead—ins and 500 L.F. of Micro-loop lead—in cable (home—run cable).				
83 S.F.	813	Furnish and install ground mounted sheet aluminum signs to consist of:				
		3 Each W3-3 NEW "SIGNAL AHEAD" sign, (36" x 36") with hardware.				
		2 Each D1-1 "Massey Blvd" sign. (48" x 12") with hardware (installed with W3-3 sign).				
		1 Each R4—7 "KEEP RIGHT" sign. (24" x 30") with hardware.				
		2 Each D3-3 "Massey BLVD; NEXT SIGNAL", (24" x 72").				
50 S.F.	813	Furnish and install mast arm mounted sheet aluminum signs to consist of:				
		1 Each D3-2 "Massey BLVD" (dual-faced)sign, (variable x 16").				
		1 Each D3-2 "Virginia AVE" sign. (variable x 16").				
		1 Each R10-12 "LEFT TURN YIELD ON GREEN (BALL)" sign, (36" x 42").				
		1 Each Associated shield assembly, M3-2 "SOUTH" (24" x 12"), M1-4 "US 11" (24" x 24"), M6-1 "RIGHT ARROW" (21" x 15")" sign, with hardware to be fabricated on a single panel (24"x51") for steel pole mounting.				
		1 Each Associated shield assembly, M3-2 "NORTH" (30" x 15"), M1-4 "US 11" (36" x 36"), M6-1 "LEFT ARROW" (30" x 24")" sign, with hardware to be fabricated on a single panel (36"x75") for steel pole mounting.				
1 Each	817	Furnish and install pushbutton and pedestrian education sign R10-4(1).				
2 Each	817	Furnish and install pushbutton and pedestrian				
		education sign R10-4(1).				

Relocate existing ground mounted sign

Cut. clean and cap mast arm/steel pole.

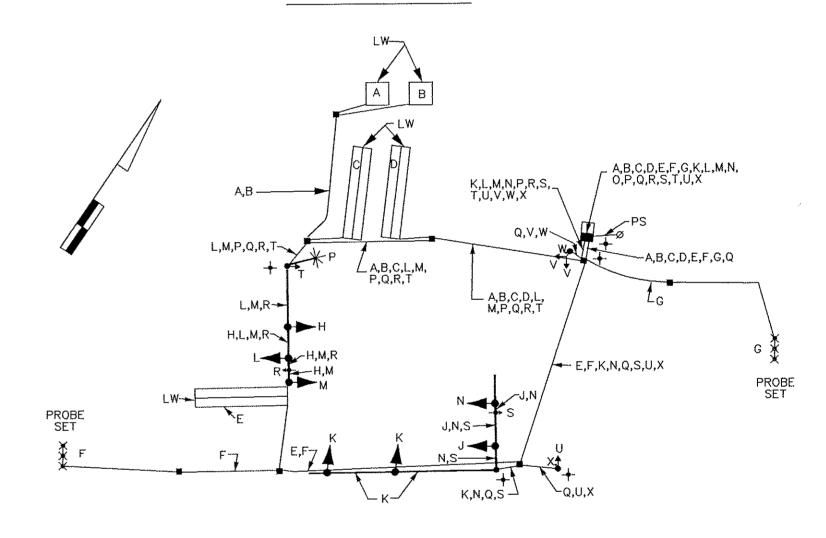
1 Each

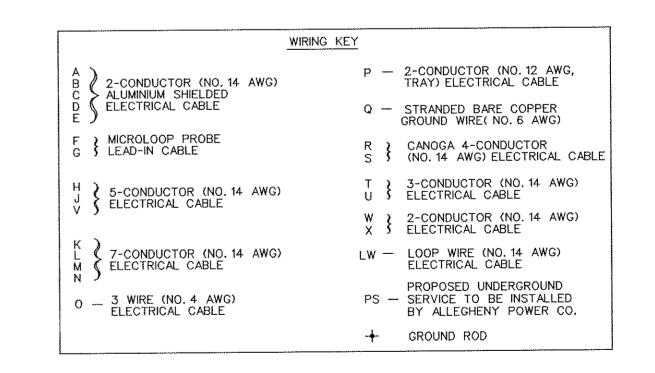
2 Each

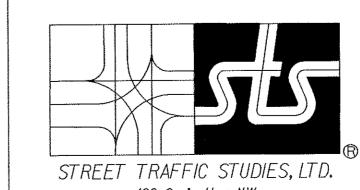
PHASE CHART

PHASE 1 & 6	- - G-/G	- G/G	G	R	R	R	R∕-G -	DW	Ð₩	DW	Đ₩	→	- -
1 CHANGE	 Y-/G	Y/G	G	R	R	R	R/−Y >	DW	DW	DW	D₩	-	
PHASE 2 & 6	G	G	G	G	G	R	R	WK	₩K	DW	D₩	<u>~</u>	~
PED CLEAR	G	G	G	G	G	R	R	FL/DW	FL/DW	DW	DW	^	
2 & 6 CHANGE	Υ	Y	Υ	Υ	Y	R	R	DW	DW	DW	DW	→	
PHASE 4	R	R	R	R	R	G	G	DW	D₩	DW	DW		F
4 CHANGE	R	R	R	R	R	Υ	Y	DW	DW	DW	DW	 	
PHASE 4 ALT	R	R	R	R	R	G	G	DW	D₩	WK	WK	1	۲
PED CLEAR	R	R	R	R	R	G	G	DW	DW	FL/DW	FL/DW	-	! -
4 ALT CHANGE	R	R	R	R	R	Υ	Υ	DW	DW	DW	DW		è
PHASE 2 PRE-EMPT	~ G−/G	- - G-/G	G	R	R	R	R	DW	DW	DW	DW		H
2 PRE-EMPT CHANGE	 Y/G	Y/G	G	R	R	R	R	DW	DW	DW	DW		
PHASE 6 PRE-EMPT	R	R	R	G	G	R	R	DW	DW	DW	DW	11	t
6 PRE-EMPT CHANGE	R	R	R	Υ	Y	R	R	DW	DW	DW	DW	H	
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	DARK	DARK	DARK	DARK	1	→ .

WIRING DIAGRAM







400 Crain Hwy., N.W. Glen Burnie, MD 21061

3615GI.DGN

Ph (410) 590-5500 Fax (410) 590-6637

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety TRAFFIC ENGINEERING DESIGN DIVISION GENERAL INFORMATION SHEET

US 11 (VIRGINIA AVE.) AND MASSEY BLVD.

DRAWN BY: E.MILESKY CHECK BY: EMM	COUNTY: WASHINGTON LOG MILE:	ts no. 3953	SHEET NO.
DATE: 10/22/99	F.A.P. NO S.H.A. NOBW 996M82	T.I.M.S. NO. D-501	<u>3</u> of <u>3</u>